

CYPRESS

# EZ-PD™ CCG2: USB TYPE-C PORT CONTROLLER

BUILD A USB 3.1 TYPE-C SOLUTION

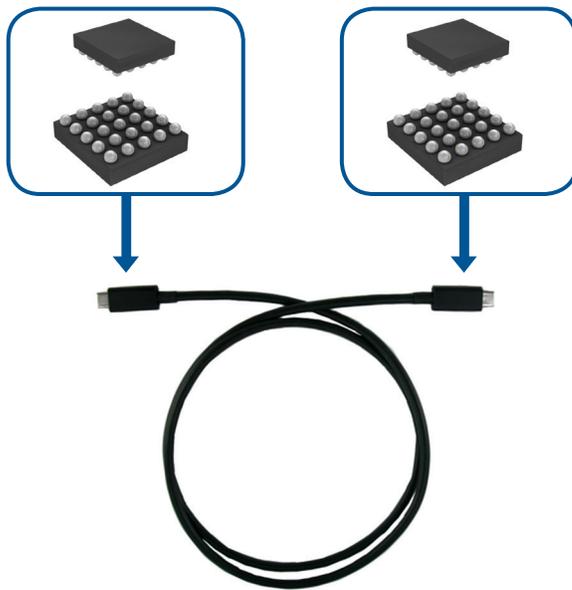


## PRODUCT OVERVIEW

### INTRODUCTION:

EZ-PD™ CCG2 is a low cost, one-chip USB Type-C port controller solution with Power Delivery (PD). CCG2 is optimized for notebook applications and for all cable applications including passive EMCA<sup>1</sup>, active EMCA, cable adapters. CCG2 enables the smallest foot print EMCA solution by integrating most external components including isolation diodes, termination resistors, and system level ESD protection. CCG2 requires only up to five external components to operate.

CCG2 has an ARM® Cortex®-M0 with 32 KB flash to enable firmware upgrades. CCG2 is available in 20-ball WLCSP, 14-pin DFN and 24-pin QFN packages.



A Type-C cable with a controller on both ends of the cable

### KEY APPLICATIONS

Cables, tablets, notebooks, dongles

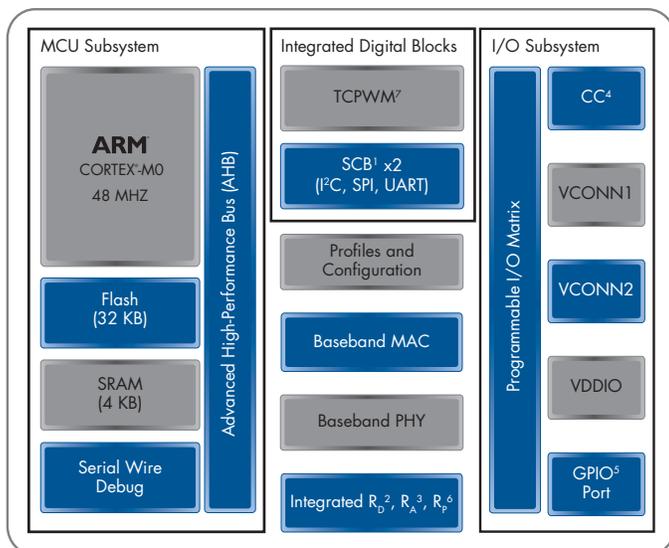
<sup>1</sup> An Electronically Marked Cable Assembly (EMCA) is a USB cable with an IC that reports cable characteristics (e.g., current rating) to the Type-C ports

### FEATURES

- 32-Bit MCU subsystem:
  - 48-MHz ARM® Cortex®-M0 MCU
  - 32 KB Flash and 4 KB SRAM
- Type-C support
  - Integrated Type-C Transceiver with termination resistors
  - 2x I<sup>2</sup>C/SPI/UART interface to EEPROM/ device controller
- Power
  - Wide operating voltages: 2.7 V – 5.5 V
  - Enhanced ESD protection: ±8-kV contact and ±15-kV air
  - Low current: deep sleep – 2.5 uA
- Package
  - 20-WLCSP
  - 14-DFN
  - 24-QFN

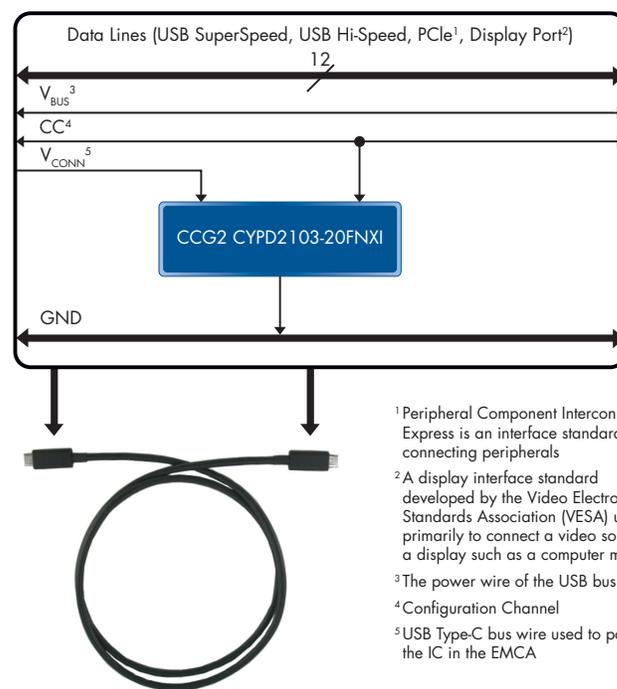


BLOCK DIAGRAMS



<sup>1</sup> Serial communication block configurable as UART, SPI or I<sup>2</sup>C  
<sup>2</sup> Termination resistor read as a UFP  
<sup>3</sup> Termination resistor read as an EMCA  
<sup>4</sup> Configuration Channel  
<sup>5</sup> General-purpose input/output  
<sup>6</sup> Current sources to indicate a DFP  
<sup>7</sup> Timer, counter, pulse-width modulation block

CCG2: USB Type-C Port controller



<sup>1</sup> Peripheral Component Interconnect Express is an interface standard for connecting peripherals  
<sup>2</sup> A display interface standard developed by the Video Electronics Standards Association (VESA) used primarily to connect a video source to a display such as a computer monitor  
<sup>3</sup> The power wire of the USB bus  
<sup>4</sup> Configuration Channel  
<sup>5</sup> USB Type-C bus wire used to power the IC in the EMCA

Type-C cable with CCG2 cable controller

CCG2 PORTFOLIO

Part Number	Application	Type-C Ports	Overcurrent Protection	Overvoltage Protection	Termination Resistor	Role	Package
CYPD2103-20FNXIT	Cable	1	No	No	R <sub>A</sub>	Cable	20-Ball CSP
CYPD2103-14LHXIT	Cable	1	No	No	R <sub>A</sub>	Cable	14-Pin DFN
CYPD2104-20FNXIT	Accessory	1	No	No	R <sub>A</sub> , R <sub>D</sub>	UFP	20-Ball CSP
CYPD2105-20FNXIT	Active Cable	1	No	No	R <sub>A</sub>	Active Cable	20-Ball CSP
CYPD2120-24LQXIT	Accessory	1	No	No	R <sub>A</sub> , R <sub>D</sub>	UFP	24-Pin QFN
CYPD2122-24LQXIT	Note Books	1	No	No	R <sub>P</sub> , R <sub>D</sub>	DRP	24-Pin QFN
CYPD2134-24LQXIT	DFP	1	No	No	R <sub>P</sub>	DFP	24-Pin QFN
CYPD2122-20FNXIT	Tablets	1	No	No	R <sub>P</sub> , R <sub>D</sub>	DRP	24-Pin QFN

GETTING STARTED

For more information on CCG2 email us at [ccg2@cypress.com](mailto:ccg2@cypress.com) or visit [www.cypress.com/ccg2](http://www.cypress.com/ccg2)

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